E. T. Engineering® Enterprises, Inc. (ETE) has revised the site plan for the above referenced matter to reflect the engineering review comments by Environmental Partners Group Inc. (EPG) as memorialized in its November 2, 2021 correspondence to the Board. In order to facilitate the review of the revised plan, each comment by EPG is first presented herein in regular text font, followed by our response in italicized bold text font. It is noted that the Town of Freetown Planning Board's staff inadvertantly supplied EPG with a previous Drainage Report dated October 2020, which did not match the revised Site Plans dated February 23, 2021. Therefore, some of the comments do not apply and ETE has addressed the remaining applicable comments. The revised plan set bears a latest revision date of February 2, 2022.

EPG COMMENTS

Notice of Intent Application

1. Limited Project — The Applicant has requested the project be considered eligible to be treated as a limited project under 310 CMR 10.53 (3) (d) which considers "The construction, reconstruction, operation and maintenance of underground and overhead public utilities, such as electrical distribution or transmission lines" as permissible projects. We recommend the Board/Commission require the Applicant provide a statement ofjustification that the proposed underground and overhead electrical utility route meets the requirements of 310 CMR10.53(3)(d)1 through 3.

ETE Response: The interconnection route along existing Cart path 'A' is the only route available to bring the electric power from the project site to Chace Road owing to the shape of the land and the configuration of resource areas onsite. In fact, the routing of the interconnection as configured using overhead wiring and wooden utility pole installation provides the least impact to the adjacent resource areas because the existing cart paths are already disturbed so that no vegetation cutting or regrading is required. The process of pole augering produces minimal disturbance of soils. The stabilization of the existing dirt cart path with a 6-inch dense grade material represents an improvement over existing conditions. The route will utilize two layers of erosion control whereby a silt fence coupled with a 12-inch silt sack will be installed in series to enhance protection.

2. Land Subject to Flooding — The Applicant is proposing work within the 100-year flood zone including clearing, grading, and panel installation. The Applicant should quantify the proposed temporary and permanent alteration to this area on the WPA Form 3. The Applicant should confirm that the project does not alter more than 10% or 5,000 square feet of Bordering Land Subject to Flooding per 310 CMR10.57(4)(a)3 and verify that the project will have no adverse effects on wildlife habitat. If required, the Applicant should provide a Wildlife Habitat Evaluation in accordance with 310 CMR 10.60.

ETE Response: Solar panels, infiltration areas, and fences have been removed from the flood zone. The area of disturbance within the bordering land subject to flooding is quantified within the accompanying project narrative. However, it should be noted that the reference to 10% or 5,000 S.F. is more applicable to the Riverfront Area, and that the work in the riverfront and does not exceed 3.6% of the delineated riverfront area. See project narrative for specifics. Overhead wiring

has been selected as the primary method of electrical transmission. The WPA Form 3 has been revised to reflect the alternative electrical transmission method and the access road stabilization. According to the published National Heritage Endangered Species Program listed species maps, endangered species are not likely to be present and therefore no adverse effects are anticipated due to the project construction.

3. Riverfront Area — The Applicant is proposing new underground and overhead electrical work within the 200—foot and 100-foot Riverfront Area. The Applicant should quantify the temporary and permanent impacts to the resource area on the WPA Form 3.

ETE Response: Overhead wiring has been selected as the primary method of electrical transmission which provides for minimum soil disturbance. The surface of existing cart paths utilized for the project are proposed to be improved with dense graded gravel mixture. An alternative analysis presents favoritism towards the selected project and its design methodology.

4. 25-foot No Touch — The Conservation Commission's policy is for Applicants to provide a no disturb area within 25 feet of wetlands. There appears to be some tree clearing and proposed fencing within the 25-foot No Touch area between wetland flags C217 and C219.

Overhead wiring has been selected as the primary method of electrical transmission, and the use therof represents a significant reduction of soils disturbance relative to underground conduit installation. The access to the work areas is via the existing unpaved cart path 'A' which runs adjacent to Fall Brook. In order to provide construction access to the work areas in a manner that minimizes erosion that could impact resource areas, the surface of the existing cart path 'A' will be improved with a 6-inches of dense graded gravel mix to fill in any existing low spots where puddling occurs and to provide a structural base that will resist rutting for future site access to the arrays as well as to the existing cranberry bogs. The routing of the electic transmission lines will by necessity need to run along the existing cart path 'A'. Therefore, work within 25 feet of the Brook is unavoidable. The tree clearing and fencing previously and inadvertantly shown encroaching on the 25 foot setback near flags C 217-219 have been fixed.

5. Erosion Control Barrier — The "Preferred Erosion Control System" detail on sheets C-5 and C- 6 should be revised to remove the sediment control fabric to be "wrapped under and around silt sack". This detail could allow water to pass under the silt sack and sediment fabric rather than be filtered through the silt sack. Additionally, the detail should show the silt sack staked into the ground at regular intervals.

ETE Response: The detail has been revised as requested and indicates the staking frequency.

6. Erosion Control Barrier — The proposed underground electric passes through the 200-foot and 100-foot Riverfront Area along the existing dirt access road on sheet C-4. The Applicant should extend the erosion controls from the existing culvert to the proposed access gate to protect this resource area.

ETE Response: The erosion control inadvertantly omitted has been extended.

7. Site Access — The Applicant should clarify which existing access roads and/or dirt cart paths will be used as a part of this project.

a. For example, on sheet C-3, erosion controls are shown along the existing access road to the east of Fall Brook and Array C terminating at existing bog near the center of the site. The Applicant notes that the access road is to be repaired, but it does not connect to other access roads with erosion controls along resource areas.

b. Similarly, on sheet C-3, there are no erosion controls shown along the access road that runs between the northern cranberry bog and resource area series "C" to the proposed gate at Array C. The project narrative indicates that this will be the primary site access route.

ETE Response: The project narrative provides additional details as to the routing of the access roads to be used for the project and labels have been added to the site plans for clarity.

8. Site Access — The Applicant should show the proposed access roads for maintenance of the solar arrays. Overall, there is limited space between the arrays and the perimeter fencing. In addition, there are some locations with steep grading along the perimeter or the stormwater basins extend to the perimeter fencing.

ETE Response: Arrays 'A' & 'C' have been reconfigured to allow a minimum of 15 feet between the proposed panels and the perimeter fencing. Array A features a perimeter gravel access road constructed of dense grade gravel mix. Array 'C' features a central gravel road that will facilitate access to the central part of the array.

9. The Applicant should indicate the |ocation(s) of the proposed 'Temporary Construction Entrance Stabilization" on the plans.

ETE Response: The temporary stone apron detail is shown on the interconnection plan sheet.

10. The Applicant should indicate the location(s) for construction period staging and parking.

ETE Response: The site grading scheme seeks to minimize grading of the natural topography as much as practical to minimize the quantities of cut/ fill materials needed for the project. It is anticipated that the only construction materials of a significant quantity beyond the structural components of the solar panels, are the loam and the dense grade gravel mix for the cart paths and perimeter roads in the arrays. The dense grade material used to repair the cart paths and to construct the perimeter roadways will be offloaded directly to the point of use as needed and immediately spread with machinery and therefore will not require stockpiling.

Stockpiles of the existing loam and stumps which will be stripped from the arrays prior to regrading can be located within the areas of the proposed arrays and are located as far away from resource areas as feasible. The stump piles and trees will be removed from the site for off site use and

disposal in the initial stages of construction and will not affect the array construction process. Once the underground electric conduits are installed and a portion of the panel array installation has been completed, the loam stockpiles can then be diminished by spreading the loam around the finished portion of the array so that the remainder of arrays can then be installed. By placing any stockpiles within the area of work it allows other areas of the site that could be cleared for the purposes of temporary stockpiles to remain in an undisturbed natural state.

Construction vehicle parking areas are abundant and will be limited to areas within the erosion control barriers which define the limit of work.

11. In accordance with MassDEP Wetlands Program Policy 17-1: Photovoltaic System Solar Array Review, the Applicant should provide analyses to demonstrate how the proposed project avoids, minimizes, and mitigates impacts to resource areas and their buffer zones.

ETE Response: Array 'B' has been completely removed from the project which results in over 4.6 acres of land conservation. In addition, the spatial extents of Arrays 'A' & 'C' have been substantially reduced. Overhead wiring has been selected as the primary method of electrical transmission which provides for minimum soil disturbance. The surface of existing cart paths utilized for the project are proposed to be improved with dense graded gravel mixture. An alternative analysis has been conducted and presents favoritism towards the selected project and its design methodology. Work within the Riverfront area has been eliminated with the exception of the interconnection route and access routes which cannot be avoided due to the shape and topography of the land. The project does not propose work within any other resource area and respects the Town of Freetown policy setback of 25 feet. The panels chosen for installation are high efficiency and are chosen to be fixed tilt rather than tracking panels due to the higher objection rates of the latter by abutting property owners. The panel arrays have been located such that future tree clearing work and/ or wetlands alterations will not be required. The fencing which is proposed features a 6-inch high gap beneath the bottom of the chain links to allow the free passage of small animals. The stormwater design methodology seeks to detain and infiltrate the entire volume of runoff and contain any transported sediments generated from disturbed areas which have been constructed at slopes of 3:1 or less. The construction of expansive level bottomed basin areas seeks to prevent channelized runoff.

Stormwater Management Standards

1. The MassDEP Stormwater Report Checklist must be signed and stamped by a Registered Professional Engineer in the State of Massachusetts.

ETE Response: The stormwater checkist will be stamped and signed for the submittal.

2. Standard 2 — At analysis point Reach 29R, the HydroCAD calculation results suggest the post-development peak flow rate exceeds the pre-development peak flow rate for Reach 1R for all storm events. The Applicant should address this increase in peak rates of runoff.

ETE Response: The runoff flow rates and volumes are discussed in the project narrative. The calculations demonstrate that the stormwater flows generated upon lands disturbed by project activities completely infiltrate into the soils within the fottprint of the development, therefore offsite

flooding will not occur.

3. Standard 2 — The Applicant should cite the source of their storm event intensities.

ETE Response: The higher Cornell precipitation intensities have been utilized for the project.

4. Standard 2 — The Applicant should quantify pre-development and post-development runoff flow rates for each storm event in a table format to provide evidence that runoff flow rates do not increase.

ETE Response: The table is included in the project narrative.

5. Standard 3 — Per Volume 2 Chapter 2 of the MA Stormwater Handbook, the Applicant provided calculations to demonstrate that the infiltration basins have been sized to drain and exfiltrate within 72 hours following precipitation events. However, it is not clear how the impervious areas used for the required recharge volume calculation and infiltration basin bottom areas used for the drawdown calculation are calculated.

ETE Response: The only impervious areas onsite which impact stormwater related discharges are the panel support posts. The HydroCAD analysis contains notes as to the size and areal coverage of the solar panel supports.

6. Standards 2 & 3 - The Custom Soil Resource Report — Soil Map does not highlight the varying hydrologic soil groups present on the proposed site. The applicant should revise the Soil Map and Map Unit Legend to depict the various hydrologic soil groups and update the HydroCAD calculations accordingly. Based on the soil types present on site, the hydrologic soil groups will range from A to D.

ETE Response: E. T. Engineering Enterprises Inc. has conducted numerous test pits across the project site and the logs of the test pits which reflect actual on the ground conditions are included within the project narrative.

7. Standard 4 — The Applicant should provide calculations demonstrating that the infiltration BMPs are sized to capture the required Water Quality Volume and that the systems have been designed to remove 80% TSS.

ETE Response: The entire volume of runoff is contained within the footprint of the arrays and cannot leave said footprint, therefore 100% of the total suspended solids (TSS) are removed.

8. Standard 6 — The project site is located within an Outstanding Resource Water for public water supply, which is identified as a critical area. The Applicant should document compliance with this standard.

ETE Response: Discrete stormwater discharges conveyed by culverts or other outfall strcutures are not proposed for the development of the project. The project has beeen configured such that all stormwater is infiltrated either at the point the rainfall contacts the surface or very near to. All

water borne sediments that may be displaced by the action of rainfall will be physicall confined within the footprint of the development. The project seeks to improve existing conditions along the existing cart paths and within areas historically affected by sand and gravel operations.

9. Standard 8 — The Applicant indicates a Stormwater Pollution Prevention Plan (SWPPP) will be provided prior to land disturbance. We recommend the Planning Board/Conservation Commission require the submittal and approval of the SWPPP as a condition ofapproval. We recommend the SWPPP be submitted to the Planning Board/Conservation Commission one month prior to the beginning of construction to allow the Board/Commission to review and comment on the SWPPP. We also recommend the Board/Commission require, as a condition of any approval, that SWPPP inspections be performed consistent with the requirements of the NPDES Construction General Permit and that copies of all SWPPP reports be submitted to the Town of Freetown.

ETE Response: ETE is in agreement with the consultant's recommendations.

10. Standard 9 — The Applicant should revise the Stomwater System Operations and Maintenance Program to be project specific. The maintenance program describes requirements for swales and inlet grates, which are not proposed as a part of this project.

ETE Response: The O&M plan has been revised.

11. Standard 9 — The Applicant should update the Stormwater System Operations and Maintenance Program to include: a plan showing the location of stormwater BMPs, their access roads, and locations for stockpiling snow; and a description and delineation of the public safety features.

ETE Response: The O&M plan has been revised. Snow removal within PV Arrays is not typically performed. Should access to the Arrays be necessary for an emergency repair, a lane can be plowed along Cart paths 'A' & 'C' in the same manner roadways are plowed by directing the snow to the side of the path. Snow stockpiling would not be necessary.

12. Standard 9 - We recommend that yearly Operation and Maintenance reports be provided to the Town. The EPA, through the Small Municipal Separate Storm Sewer System (MS4) permit, is requiring that ongoing maintenance of private stormwater management systems be performed regularly and documented.

ETE Response: ETE is in agreement with the consultant's recommendations.

13. Standard 9 -The Applicant should provide detail on how the basins will be accessed for periodic required maintenance. In accordance with Volume 2, Chapter 2 of the Stormwater Handbook, provide a minimum 15-foot wide "unimpeded vehicular access around the entire basin perimeter".

ETE Response: Perimeter access roads have been added around arrays A & C inside the perimeter fencing that allow vehicular access to the infiltration areas. The HydroCAD analyses indicate that during a large 100 year storm event, the accumulated water surface elevations within the low point areas of the arrays seldom is greater than ½- inch and never exceeds 2.5 inches. The high permeabilty of the insitu sandy soils causes these peak depths to infiltrate rapidly. The HydroCAD

calculations for Arrays A & C demonstrate that the surface water infiltrates within 1-3 hours following the peak water surface elevation during the 100 year event. The analyses also demonstrate that for the 2 and 10 year storms, surface water ponding in nonexistent. Basin surface maintenance using rakes, lawn mowers and weed wackers beneath panels and around panel supports will be readily accessible.

14. Standard 10 — The Applicant indicates that an Illicit Discharge Compliance Statement will be provided prior to discharge of any stormwater to the post-construction stormwater BMPs. We recommend the Planning Board/Conservation Commission require the submittal as a condition of approval.

ETE Response: ETE is in agreement with the consultant's recommendations and an illicit discharge statement has been prepared within the O&M plan.

15. The proposed infiltration basins are located within the limits of the solar arrays. Stormwater management devices should be free of obstructions and accessible for maintenance. Infiltration basin floors should be flat to provide uniform ponding and exfiltration. We recommend the Applicant revise the design so that no structures are proposed over or within the infiltration basins.

ETE Response: The "basins" utilized for the project infiltration needs consist of grass covered depressed regions with level bottoms within the footprints of the arrays which collect stormwater. As discussed above in the response to Comment # 13, the ponding is generally non-existent, except for short lived ponding of minimal depth during extreme rainfall events. Any water that does collect quickly infiltrates. Access to the solar arrays for repairs and maintenance is generally very limited and the need to access specific panel areas where temporary ponding may be ocurring during an extreme rainfall event is unlikely. Any conceivable repair required to panels within temporarily ponded areas can reasonably be delayed.

16. For clarity during review, we request separate pre- and post-development Watershed Plans depicting the time of concentration flow paths and cover types. These plans are typically included in stormwater reports.

ETE Response: Separate watershed plan sheets show each array area and the limits of the proposed development as well as the existing and proposed ground coverage types. All areas disturbed by project work are included within the HydroCAD analysis. Arrays 'A' and 'C' in their existing state are mostly wooded, with generally low slopes with the exception of a few areas of local steep soils. Arrays 'A'and 'C' in its post development state grade out any localized steep slopes and are covered with grassed surfacse except for the solar supports, equipment pads, and a perimeter roadways which are all accounted for in the stormwater model. The time of concentrations are shown on the watershed plans and the time of concentration for the most hydrologically distant point has been utilized for the model.

17. The Watershed Plans, sheets C-8 and C-9, indicate that the pre-development subcatchment areas encompass the post-development subcatchments and that the pre- and post- development

subcatchments are identically sized. However, the HydroCAD calculations show that the total pre-development analysis area is approximately 21.4 acres, while the post-development analysis area is approximately 33.3 acres. The Applicant should update the HydroCAD calculations and/or the Watershed Plans as required.

ETE Response: EPG did not have a matching stormwater analysis and plan set which were both beyond the control of EPG or ETE.

18. The Applicant should account for the existing wooded areas in pre-development subcatchment C that makes up the majority of the area.

ETE Response: EPG did not have a matching stormwater analysis and plan set which were both beyond the control of EPG or ETE.

19. For all subcatchments, the Applicant should account for the proposed impervious areas for pad mounted equipment in the proposed HydroCAD calculations, and the Applicant should account for gravel/dirt access roads in both the existing and proposed HydroCAD calculations. In addition, the Applicant should account for the impervious area from solar array supports in subcatchments A1, A2, A3, A4, A5, and A6.

ETE Response: The HydroCAD analyses account for the impervious pad locations, solar supports, and the gravel perimeter roadways.

20. The Applicant should submit test pit logs for all test pits completed on site to verify separation from seasonal high ground water and infiltration rates for infiltration basins.

ETE Response: Test pit logs are part of the project narrative document.

21. The 100-year flood elevations for the proposed basins shown on sheet C-4 (basins C1, C2, C- 3, C-4, C-5, and C-6), sheet C-5 (basins A3, A4, and A6), and sheet C-6 (basins B1 and B2) do not match the HydroCAD calculation results for peak elevation. In addition, the Massachusetts Stormwater Management Standards require one foot of freeboard between the peak elevation and the top of stormwater management facilities. During the 100-year storm, all proposed stormwater management BMPs include less than one foot of freeboard. The Applicant should update the plans and/or HydroCAD calculations as required.

ETE Response: EPG did not have a matching stormwater analysis and plan set which were both beyond the control of EPG or ETE. The stormwater management facilities all have in excess of one foot of freeboard.

22. The proposed pad mounted transformer #2 within Array C is located within the limits of basin C6. Electrical equipment should not be located within areas subject to standing water and stormwater management devices should be free of obstructions.

ETE Response: The transformer is no longer within an infiltration area.

23. The Applicant should provide a detail for construction of the infiltration basins.

ETE Response: Details have been added to the plan set

24. The Applicant should provide a detail for disturbed surface restoration and indicate the proposed seed mix.

ETE Response: Notes have been added to the plan set.

General Comments

1. The line types, colors, and weights for various site features shown on the sheet legends do not match the plans. For example, the 25' wetlands set back is shown on the legend in orange, but on the plans as magenta on sheets C-2 and C-3. The legend shows dashed linetypes, but all linetypes on the plans are solid. We recommend the Applicant correct this for plan readability.

ETE Response: The legend has been revised.

2. The elevation datum should be indicated on the plans. The plans should utilize the USGS elevation datum.

ETE Response: The benchmarks were previously shown on several sheets and are referenced to NAVD-88.

3. The Applicant is proposing the grading of un-stabilized slopes throughout the project area. Developed earthen areas should not exceed slopes 3:1 to minimize the risk of erosion. Slopes greater than 3:1 require further stabilization, which should be specified on the plans.

ETE Response: ETE is unsure what the reviewer is referring to by this comment, however, ETE will note that all areas of work disturbed will be stabilized and that the proposed slopes throughout the arrays are quite flat and are generally 15:1 or less. Slopes of a 3:1 maximum have been proposed only along isolated sections of the exterior of Array 'C' so support the construction of level bottom stormwater basins.

4. The Applicant should provide sound level data on pad mounted equipment and describe any measures designed to minimize sound impacts to abutters.

ETE Response: The sound level of the proposed central inverter which is the main sound source of the system is usually less than or equal to 85 decibels at one meter based on IEC standards. The nearest occupied abutter is approximately 1,500 feet distant.